UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,445	11/24/2003	Hossein Sedarat	6491P066	7128

7590 01/26/2007	EXAMINER
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ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 November 2003</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-45</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1-45</u> is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) <u>12,27 and 42</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Specification

1.   The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2.   The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3.   Claim 12 is objected to because of the following informalities: The examiner suggests applicant use "determining a gain factor" and "an equivalent noise power" in lines 3 and 5, since the gain factors and equivalent noise power determining are per sub-carrier.

Appropriate correction is required.

4.   Claim 27 is objected to because of the following informalities: The examiner suggests applicant use "determining a gain factor" and "an equivalent noise power" in lines 3 and 5, since the gain factors and equivalent noise power determining are per sub-carrier.

5.   Claim 42 is objected to because of the following informalities: The examiner suggests

applicant use "determining a gain factor" and "an equivalent noise power" in lines 3 and 5, since

the gain factors and equivalent noise power determining are per sub-carrier.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

7.   Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-

statutory subject matter. Claim 1 is directed to a judicial exception to 35 U.S.C. 101 (i.e., a

mathematical algorithm) and is not directed to a practical application of such judicial exception

because the claim does not require any physical transformation and the invention as claimed does

not produce a useful, concrete and tangible result. Applicant's method discloses steps of

determining, detecting and applying whose final product is a number, i.e. an equivalent noise

power.

Claims 2-12 are rejected based upon their dependency upon rejected claim 1.

8.   Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. Claim 13 is directed to a judicial exception to 35 U.S.C. 101 (i.e., a

mathematical algorithm) and is not directed to a practical application of such judicial exception

because the claim does not require any physical transformation and the invention as claimed does

not produce a useful, concrete and tangible result. Applicant's method discloses steps of

determining, detecting and applying whose final product is a number, i.e. an equivalent noise power.

Claims 14-15 are rejected based upon their dependency upon rejected claim 13.

9.   Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 16 is directed to a judicial exception to 35 U.S.C. 101 (i.e., a mathematical algorithm) and is not directed to a practical application of such judicial exception because the claim does not require any physical transformation and the invention as claimed does not produce a useful, concrete and tangible result. Applicant's executable instructions disclose steps of determining, detecting and applying whose final product is a number, i.e. an equivalent noise power.

Claims 17-27 are rejected based upon their dependency upon rejected claim 16.

10.   Claim 28 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 28 is directed to a judicial exception to 35 U.S.C. 101 (i.e., a mathematical algorithm) and is not directed to a practical application of such judicial exception because the claim does not require any physical transformation and the invention as claimed does not produce a useful, concrete and tangible result. Applicant's executable instructions disclose steps of determining, detecting and applying whose final product is a number, i.e. an equivalent noise power.

Claims 29-30 are rejected based upon their dependency upon rejected claim 28.

11.   Claim 31 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. Even though claim 31 is written in a means-plus function format,

for the purpose of this rejection it is being treated as though it were a method claim. If the

functionally-defined disclosed means and their equivalents are so broad that they encompass any

and every means for performing the recited functions, the apparatus claim is really to the method

or series of functions itself and as such should be treated as a method claim. Walter, 205 USPQ

at 408. Therefore the rejection of claim 1 applies to claim 31 as well.

    Claims 32-42 are rejected based upon their dependency upon rejected claim 31.

12.   Claim 43 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter. Even though claim 43 is written in a means-plus function format,

for the purpose of this rejection it is being treated as though it were a method claim. If the

functionally-defined disclosed means and their equivalents are so broad that they encompass any

and every means for performing the recited functions, the apparatus claim is really to the method

or series of functions itself and as such should be treated as a method claim. Walter, 205 USPQ

at 408. Therefore the rejection of claim 13 applies to claim 43 as well.

    Claims 44-45 are rejected based upon their dependency upon rejected claim 43.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

    a.) Sedarat et al. discloses in US 2006/0062379 A1 Methods and Apparatuses For

Detecting And Reducing Non-Linear Echo In A Multi-Carrier Communication System.

      b.) Sedarat discloses in US 2006/0067388 A1 discloses Methods And Apparatuses For Detecting Impulse Noise In A Multi-Carrier Communication System.

      c.) Sedarat et al. discloses in US 2006/0222098 A1 Impulse Noise Gating In DSL Systems.

      d.) Sedarat discloses in US 2006/0253515 A1 Methods And Apparatuses Of Measuring Impulse Noise Parameters In Multi-Carrier Communication Systems.

      e.) Sedarat discloses in US 2006/0083321 A1 Multi-Carrier Communication Bit-Loading In Presence Of Radio-Frequency Interferers.

      f.) Sedarat discloses in US 2005/0190825 A1 Bit-Loading In Multicarrier Communication Systems In The Presence of An Asymmetric, Correlated Gaussian Noise Sources.

      h.) Sedarat discloses in US 2005/0169357 A1 Reliable Multicarrier Communication In The Presence Of Timing Phase Error.

      i.) Azenkot et al. discloses in US Patent 6,859,488 B2 Detection Of Impulse Noise Using Unused Codes In CDMA Systems.

      j.) Yousef et al. discloses in US 2004/0066865 A1 Impulse Noise Detection From Preamble Symbols.
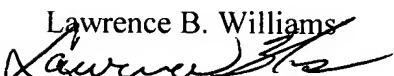
      k.) Tong et al. discloses in US Patent 6,006,0083 Tone Detection.

      l.) Hughes-Hartogs discloses in US Patent 4,679,227 Ensemble Modem Structure For Imperfect Transmission Media.

14.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037.

The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
January 20, 2007